

Scientific Posters

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Orientation Training for RSIF PhD Scholars, June 2021

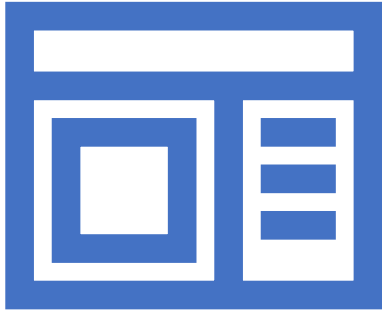


Communication scientifique : Affiches

Recommended videos



- Introduction to Effective Poster Presentations
- <https://www.youtube.com/watch?v=j4qUjUeRjy4&feature=share&list=PLQYPRVjgJEZzd9EAqwml53ziYOqldQpJ3>
- Effective Poster Headings
- <https://www.youtube.com/watch?v=ZQ3L8rf9IM&list=PLQYPRVjgJEZzd9EAqwml53ziYOqldQpJ3&index=2>
- Giving an Effective Poster Presentation
- <https://www.youtube.com/watch?v=vMSaFUrk-FA&list=PLQYPRVjgJEZzd9EAqwml53ziYOqldQpJ3&index=3>
- How to make an academic poster in powerpoint
- https://www.youtube.com/watch?v=_Wnholbfc0M
- 8 Ways to Create a Powerful Research Poster
- <http://www.aje.com/en/arc/ways-to-create-great-research-poster/>



What is a scientific poster,
and how is it used?

Qu'est-ce qu'une affiche scientifique et comment est-elle utilisée ?

Poster sessions at conferences

- The technical poster is popular at conferences and events worldwide.
- A special session, in a designated hall, is usually dedicated to posters.
- The researcher stands by their poster to engage viewers in conversation about the research.
- At some conferences, a committee reviews the posters and chooses the best among them for an award.



Séances d'affiches lors de conférences

L'affiche technique est populaire lors de conférences et d'événements dans le monde entier.

Une session spéciale, dans une salle désignée, est généralement consacrée aux affiches.

Le chercheur se tient à côté de son affiche pour engager les téléspectateurs dans une conversation sur la recherche.

Lors de certaines conférences, un comité examine les affiches et choisit les meilleures d'entre elles pour un prix.



<http://www.spoken-science.com/portfolio/scientific-posters/>



What should a poster be?

- A poster is a communication and networking tool
- A poster should not contain every detail of your research
- Only carefully selected information and images/graphics should go into your poster that support your key message
- It should attract people's attention and serve as a conversation starter
- A poster should use **visuals** to draw people in from a distance.

<https://www.socialsciencespace.com/2018/05/4-steps-to-designing-an-award-winning-poster/>

Que doit être une affiche ?

Une affiche est un outil de communication et de réseautage

Une affiche ne doit pas contenir tous les détails de votre recherche

Seules des informations et des images/graphiques soigneusement sélectionnés doivent figurer dans votre affiche pour soutenir votre message clé.

Il devrait attirer l'attention des gens et servir d'amorce de conversation.

Une affiche doit utiliser des éléments visuels pour attirer les gens à distance.



What should a poster be?

- A typical conference poster session has many, many posters
- A poster should use title and visuals to draw people in from a distance
- No one wants to read lots of text in a poster
- People want you to share the story of your research and engage in conversation
- The poster should contain enough CLEAR information so that the reader can understand your MAIN MESSAGE

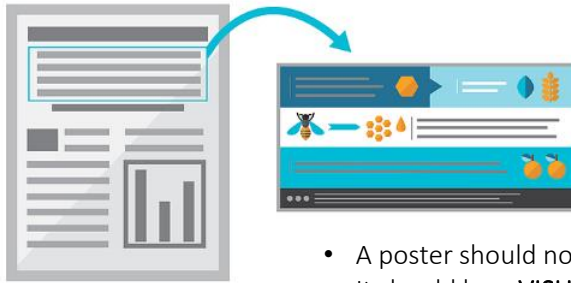
<https://www.socialsciencespace.com/2018/05/4-steps-to-designing-an-award-winning-poster/>

Que doit être une affiche ?

Une session d'affiches de conférence typique a de très nombreuses Une affiche doit utiliser un titre et des éléments visuels pour attirer les gens à distance Personne ne veut lire beaucoup de texte dans une affiche Les gens veulent que vous partagiez l'histoire de votre recherche et engagez une conversation L'affiche doit contenir suffisamment d'informations CLAIRES pour que le lecteur puisse comprendre votre MESSAGE PRINCIPAL

A scientific poster is a visual representation of scientific research

A poster is a visual abstract of your research



- A poster should not look like a paper!
- It should be a **VISUAL** representation of an abstract, but with minimal text
- It should have a **MAIN** message.

<https://www.socialsciencespace.com/2018/05/4-steps-to-designing-an-award-winning-poster/>

Une affiche scientifique est une présentation visuelle de la recherche scientifique

Une affiche ne doit pas ressembler à un papier ! Il doit s'agir d'une représentation VISUELLE d'un résumé, mais avec un minimum de texte Il devrait avoir un message PRINCIPAL.

Where to start?

- What is your main message?
- What does the reader need to know?
- Your title (heading) will be based on the key message
- Write an abstract
- Everything in your abstract should support the key message. If it doesn't, then throw it out!

Où commencer?

Quel est votre message principal ?

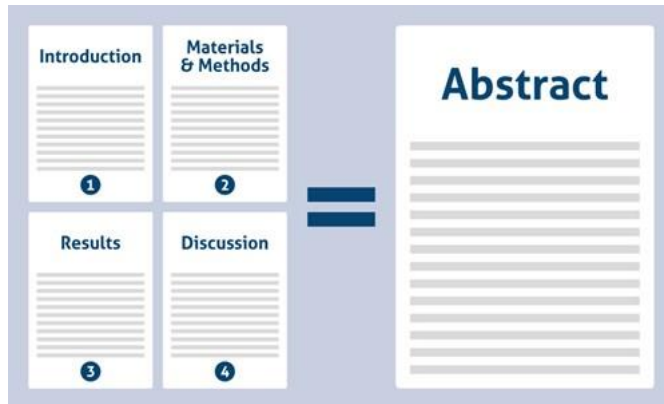
Que doit savoir le lecteur ?

Votre titre (titre) sera basé sur le message clé

Rédiger un résumé

Tout dans votre résumé doit soutenir le message clé. Si ce n'est pas le cas, jetez-le !

An abstract is an abbreviated form of a paper



Un résumé est une forme abrégée d'un article

Writing the abstract as the starting point for a poster



1. Introduction: "What is the subject?" 5-6 sentences explaining topic, context, purpose, and research question(s).



2. Materials and methods: 3-5 sentences describing your research methods (also include data analysis).



3. Results: 5-10 sentences describing the results/findings.



4. Discussion and further directions: What is the take-home message of your project and its impact? Write 3-5 sentences containing your conclusions and recommendations.



Final tip: It is very helpful if someone else reads your abstract. If possible, ask your colleagues to provide feedback.

<https://www.ptglab.com/news/blog/how-to-write-a-good-scientific-abstract/>

Rédaction du résumé comme point de départ d'une affiche

1. Introduction : « Quel est le sujet ? 5 à 6 phrases expliquant le sujet, l'objectif et la ou les questions de recherche.
2. Matériels et méthodes : 3 à 5 phrases décrivant vos méthodes de recherche (incluez également l'analyse des données).
3. Résultats : 5 à 10 phrases décrivant les résultats/constatations.
4. Discussion et autres orientations : quel est le message à retenir de votre projet et de son impact ? Écrivez 3 à 5 phrases contenant vos conclusions et recommandations.

Dernier conseil : Il est très utile que quelqu'un d'autre lise votre résumé. Si possible, demandez à vos collègues de vous faire part de leurs commentaires.

Writing text for the poster



Who is your target audience?



What is their level of understanding of the subject?



A poster written in plain language works with both experts and non-experts



Highly technical and complicated writing greatly limits your potential audience


Rédaction de texte pour l'affiche

Qui est votre public cible?


Quel est leur niveau de compréhension du sujet ?

Une affiche rédigée en langage simple fonctionne à la fois avec des experts et des non-experts

Une écriture très technique et compliquée limite considérablement votre public potentiel



Writing text for the poster

- Use your **abstract** as the starting point for writing the sections in the poster
 - Introduction
 - Materials and methods
 - Results
 - Discussion/Conclusion
 - Is an Abstract needed in the poster?
 - Acknowledgements
- 

Rédaction de texte pour l'affiche

Use your abstract as the starting point for writing the sections in the poster

Matériels et méthodes

Résultats

Discussion/Conclusion

Un résumé est-il nécessaire dans l'affiche ?

Remerciements

Writing text for the poster

- **Bullet points:** a poster should not look like a paper; therefore, bullet points are your friend.
- Avoid wordy paragraphs
- Bullet points are less intimidating
- Try to keep to less than 750-1000 words in total (less is better!) [this slide has 53 words]

Rédaction de texte pour l'affiche

Puces : une affiche ne doit pas ressembler à un papier ; par conséquent, les puces sont vos amis.

Évitez les paragraphes verbeux

Les balles sont moins intimidantes

Essayez de vous en tenir à moins de 750-1000 mots au total (moins c'est mieux !)
[cette diapositive a 53 mots]



Emphasis using visuals

- Carefully select only essential visuals that support the main message.
- Your visuals must be easy to understand. Very complex graphs and tables are never read.
- Complex graphs? Then highlight the most important information.
- Use graph and table formats that portray the data without reference to extensive keys.
- Use flow diagrams for methods
- Images should be high quality (not pixelated).

http://www.nuigalway.ie/remedi/poster/media/Posters_Good_and_bad.pdf

<https://www.socialsciencespace.com/2018/05/4-steps-to-designing-an-award-winning-poster/>

Mettre l'accent à l'aide de visuels

Sélectionnez soigneusement uniquement les éléments visuels essentiels qui soutiennent le message principal.

Vos visuels doivent être faciles à comprendre. Les graphiques et les tableaux très complexes ne sont jamais lus.

Des graphiques complexes ?

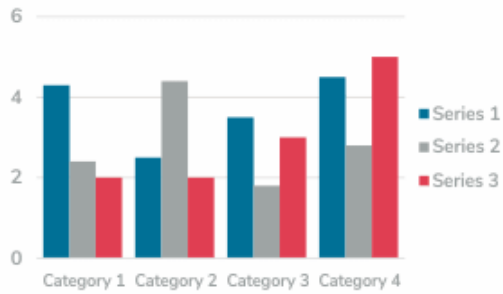
Mettez ensuite en évidence les informations les plus importantes.

Utilisez des formats de graphique et de tableau qui représentent les données sans référence à des clés étendues.

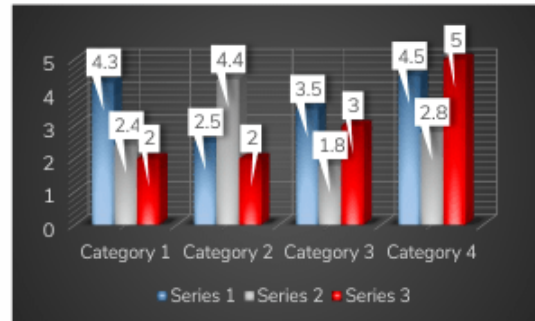
Utiliser des organigrammes pour les méthodes

Les images doivent être de haute qualité (non pixelisées).

Good Chart



Bad Chart



Note: every graph, table should also have an explanatory legend (not just a title)

Good Table

Trial	Apple	Banana	Carrot
1	555	341	200
2	241	589	332
3	563	663	124
4	254	995	234

Bad Table

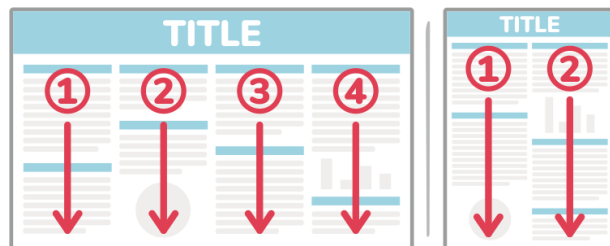
	Apple	Banana	Carrot
Trial 1	555	341	200
Trial 2	241	589	332
Trial 3	563	663	124
Trial 4	254	995	234

Note: Important results are highlighted.

Don't forget to include an explanatory legend on each figure

Some basics

- Use sections with headers: Large, easy-to-read headings
- Logical flow of the sections as easy as possible for the viewer to follow.
- A poster is a visual abstract.



<https://www.makesigns.com/tutorials/scientific-poster-parts.aspx>

Quelques bases

Utilisez des sections avec des en-têtes : des titres volumineux et faciles à lire
Flux logique des sections aussi facile que possible pour le spectateur à suivre.
Une affiche est un résumé visuel.



Some basics

- Keep it simple
- Layout and size: vertical or horizontal? Size? Check with the conference organisers.
- Panels: How do we read: Left to right & Top-down.
- Make sure you have a clear directional flow.
- Leave space at the edges of the poster
- Eye-catching visuals.

<https://www.socialsciencespace.com/2018/05/4-steps-to-designing-an-award-winning-poster/>

<https://www.makesigns.com/tutorials/poster-design-layout.aspx>

Rester simple

Disposition et taille : verticale ou horizontale ? Taille? Renseignez-vous auprès des organisateurs de la conférence.

Panneaux : Comment lisons-nous : De gauche à droite et de haut en bas.

Assurez-vous d'avoir un flux directionnel clair.

Laissez de l'espace sur les bords de l'affiche

Des visuels accrocheurs.

Some basics

- **Colour:** this should be common sense
- Use a limited number of colours, say three-to-five, and stick with them! Graphs included.
- **Background** – none
- Fonts **Arial**
Calibri

Terrible use
of colours



Quelques bases

Couleur: cela devrait être du bon sens

Utilisez un nombre limité de couleurs, disons trois à cinq, et respectez-les !

Graphiques inclus.

Contexte - aucun

Polices: Arial, Calibri

Mauvaise utilisation des couleurs



Font sizes

The whole poster should be readable from 4 feet.

Tailles de police

L'ensemble de l'affiche doit être lisible à partir de 4 pieds.

Background

Good Background



Bad Background



Arrière-plan



Tips

- Make **important** information stand out
- Simple is good
- Line things up
- Use a poster template if possible (e.g. <https://www.posterpresentations.com/free-poster-templates.html>)
- Avoid abbreviations that most people won't understand
- Check spelling, grammar and punctuation,,.
- Align text left (easier to read). Do not justify (i.e. do not flush left and right)
- Remove unnecessary spaces between words

Conseils

Faites ressortir les informations importantes

Simple c'est bien Aligned les choses

Utilisez un modèle d'affiche si possible (par exemple

<https://www.posterpresentations.com/free-poster-templates.html>)

Évitez les abréviations que la plupart des gens ne comprendront pas Vérifiez

l'orthographe, la grammaire et la ponctuation

Alignez le texte à gauche (plus facile à lire).

Ne pas justifier (c'est-à-dire ne pas rincer à gauche et à droite)

Supprimer les espaces inutiles entre les mots

Review your poster

Print

Print an A4 version and check it yourself.

Feedback

Get feedback from your supervisor and/or colleagues before printing the final poster.

Pitch

Prepare and sharpen your pitch! Practice summarising your poster in about a minute or two. Remember who your audience is.

Ineffective posters

Many ineffective posters suffer from easy-to-fix problems, including ...

- Poor title
- The main message is not clear
- Text too small
- Poor graphics
- Poor organization
- Too crowded



Affiches inefficaces

De nombreuses affiches inefficaces souffrent de problèmes faciles à résoudre, notamment ...

Mauvais titre

Le message principal n'est pas clair

Texte trop petit

Mauvais graphismes

Mauvaise organisation

Trop de monde

Why is this a terrible poster?

PIGS IN SPACE
EFFECT OF ZERO-GRAVITY AND
AD LIBITUM FEEDING ON WEIGHT
GAIN IN CAVIA PORCELLUS

Colin B. Purrington
 6673 College Avenue, Swarthmore, PA 19081 USA

ABSTRACT:
 One ignored benefit of space travel is a potential elimination of obesity, a chronic problem for a growing majority in many parts of the world... In theory, when an individual is in a condition of zero gravity, weight is eliminated... Indeed, in space one could conceivably follow ad libitum feeding and never even gain an gram, and the only side effect would be the need to upgrade one's stretch pants ("exercise pants"). But because reality diet schemes start as very good theories only to be found to be either harmful, we tested our predictions with a long-term experiment in a colony of Guinea pigs (*Cavia porcellus*) maintained on the International Space Station. Individuals were housed separately and given unlimited amounts of high-calorie food pellets... Fresh fruits and vegetables were not available in space, and therefore, Every 30 days, each Guinea pig was weighed. After 3 years, we found that individuals, on average, weighed nothing... In addition to weighing nothing, no weight appeared to be gained over the duration of the protocol... If space continues to be gravity-free, and we believe that assumption is sound, we believe that sending the overweight — and those at risk for overweight — to space would be a lasting cure.

INTRODUCTION:
 The current obesity epidemic started in the early 1950s with the invention and proliferation of plastics and related stretch fibers, which released wearers from the rigid constraints of clothes and permitted monthly weight gain without the need to buy new outfits. Indeed, exercise today for hundreds of million people involve only the act of wearing stretch pants in public, presumably because the compressive pressure forces fat molecules to adopt a more compact tertiary structure (Xavier 1965).
 Luckily, at the same time that fabrica became stretchy, the race to the moon between the United States and Russia yielded a useful fact: gravity in outer space is minimal to nonexistent. When gravity is zero, objects cease to have weight. Indeed, early astronauts and cosmonauts had to secure themselves to their ships with seat belts and sticky boots. The potential application to weight loss was noted immediately, but at the time travel to space was prohibitively expensive and thus the issue was not seriously pursued. Now, however, multiple companies are developing cheap extra-orbital travel options for normal consumers, and potential travelers are also creating new ways to play for products and services that they cannot actually afford. Together, these factors open the possibility that moving to space could cure overweight syndrome quickly and permanently for a large number of humans.
 We studied this potential by following weight gain in Guinea pigs, known on Earth as fond of ad libitum feeding. Guinea pigs were long envisioned to be the "Guinea pig" of space research, but, as they summed the obvious choice. Studies on humans are of course desirable, but we feel this current study will be critical in securing the attention of granting agencies.

MATERIALS AND METHODS:
 One hundred male and one hundred female Guinea pigs (*Cavia porcellus*) were transported to the International Space Laboratory in 2010. Each pig was housed separately and provided of exercise wheels, and fresh fruits and vegetables for 48 months. Each month, pigs were individually weighed by duct-taping them to an electronic balance sensitive to 0.0001 grams. Back on Earth, an identical cohort was similarly maintained and weighed. Data was analyzed by statistics.

RESULTS:
 Mean weight of pigs in space was 0.0000 ± 0.0002 g. Some individuals weighed less than zero, some more, but these variations were due to reaction to the duct tape, we believe, which caused them to be alarmed path briefly against the force plate in the balance. Individuals on Earth, the control cohort, gained about 240 grams (g ± 0.0002). Male and females gained a similar amount of weight on Earth (no main effect of sex), and size at any point during the study was related to starting size (which was used as a covariate in the ANCOVA). Both Earth and space pigs developed substantial dewlaps (double chins) and were lethargic at the conclusion of the study.

CONCLUSIONS:
 Our view that weight and weight gain would be zero in space was confirmed. Although we have not replicated this experiment on larger animals or primates, we are confident that our result would be mirrored in other model organisms. We are currently in the process of obtaining necessary human trial permissions, and should have our planned experiment initiated within 80 years, pending expedited review by local and federal ethics.

ACKNOWLEDGEMENTS:
 I am grateful for generous support from the National Research Foundation, Black Hole Diet Paris, and the High Fructose Sugar Association. Transport flights were funded by SPACE-EXES, the consortium of wives divorced from insatiably wealthy space-flight capitalists. I am also grateful for comments on early drafts by Mariana Almeida, Duke Campus Christ, USA. Finally, sincere thanks to the Guy Foundation for generously sending animal care after the conclusion of the study.

LITERATURE CITED:
 NASA. 1982. Project STS-00K: Guinea Pigs. Unlabeled internal memo.
 Seldin, S.F., D. O. Leback, and N. M. Neuman. 2005. The Fetus Gained Exercise Like An Astronaut: Gravity Loading Is Necessary For The Physiological Development During Second Half Of Pregnancy. *Medical Hypotheses* 64:223-229.
 Xavier, M. 1965. Elastane Purchases Accelerate Weight Gain In Case-control Study. *Journal of Obesity*, 2:23-40.

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<http://colinpurrington.com/tips/academic/posterdesign>

Pourquoi est-ce une affiche terrible?

TIPS FOR DESIGNING BETTER RESEARCH POSTERS

Research posters are a common way to show the results of a project in the academic community. Researchers present posters at conferences as a way to communicate their work in a summarized way to a broader audience. The research poster must be clear, concise and attractive in order to generate discussion and feedback from colleagues. However, it's not easy to achieve these goals when juggling all your work in a format. Here are some tips to help you design effective research posters that stand out.

PREPARATION

Before creating your poster you should consider the following questions:

- What is your target audience?
- What is your main message?
- What does your interest field entail?

Once you've decided on the main content, make a rough draft or storyboard with the information, letters and graphics you need.

TEXT

Keep in mind that important information should be readable from about 2.5 meters away and attract interest from about four meters.

Use of bullet, numbering, and headings, make it easy to read. Moreover, do not add bullets to section headings, better use a bullet - larger font - for demarcating sections.

Avoid blocks of text longer than 10 sentences.

Use a sans serif font like Arial or Helvetica and keep size around 78 - 100 pts, subheadings around 40 pts and body text around 24 pts.

Sometimes less is more, avoid any three-dimensional text or graphics.

PRINTING AND PRESENTING

Save the file in a PDF format with the correct size, if possible print a draft first and double check for mistakes.

Consider preparing handouts of your poster.

References:
http://www.english-center.com/eng
http://www.researchposters.com/eng/engposters/posters/posters.html
http://www.researchposters.com/eng/engposters/posters/posters.html



LAYOUT

Don't cram everything too tightly into the space. Aim for a word count of about 200 to 800 words.

Use "larger" areas and create a grid to give your content room to breathe.

Find a focal point that will help draw your viewers in.

PHOTOS AND GRAPHICS

Use diagrams, graphs or flowcharts to help explain complex information visually. Keep about a 70/30 ratio of graphics to text.

Keep in mind the resolution of your graphics, use at least images with 100 dpi, but no larger than 300.

Images that look good online may not be high enough resolution to look good in print at the size you want them to be.

COLOR

Try not to use too many different colors or gradients stick to a 3-5 color palette.

Avoid using unnecessary and distracting background textures or decorations.

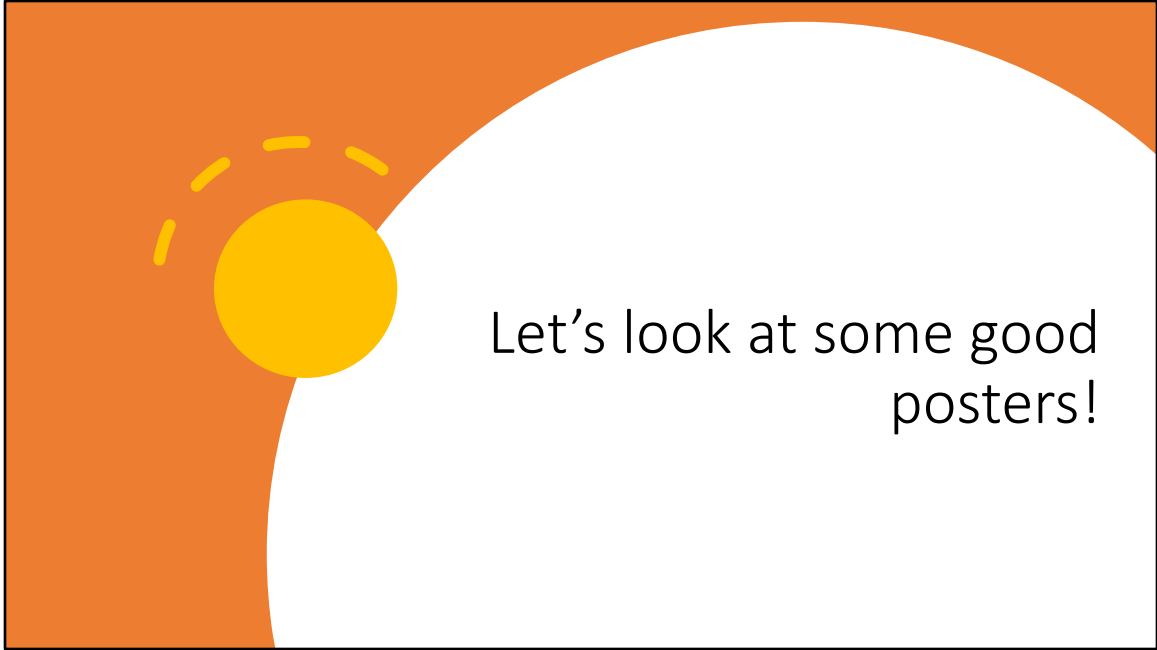
Use a plain and light color background, deep blues and black backgrounds often produce posters that are too dark and difficult to read.

SOFTWARE

Microsoft PowerPoint is the popular, easy-to-use software. However it is not the best option for poster design.

Adobe InDesign and LaTeX are the best options for text setting and layout but can be complex to use. Another option is Adobe Illustrator or Photoshop which are perfect for images and graphics.

<https://visual.ly/community/infographic/science/how-design-better-research-posters>



Regardons quelques bonnes affiches!

Cryogenic Temperature Effects on Superelasticity of the Novel Intermetallic Compound CaFe_2As_2 At Small Length Scales

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Introduction

- Materials properties of CaFe_2As_2 are sensitive to pressure and temperature.
- Reversible phase transformations occur from tetragonal to collapsed tetragonal phase by deformation → Superelasticity (S)
- The hydrostatic pressure required to induce phase transformation decreases as the temperature decreases.
- Temperature dependence on Superelasticity (S)
- Single-crystal single crystals are usually too small (nanosized). Conventional bulk-scale uniaxial mechanical testing is very difficult. Small-scale mechanical testing is necessary.
- DFT calculations can aid in understanding how the lattice collapse, the reversible solid-state phase transition and their relation to superelasticity.

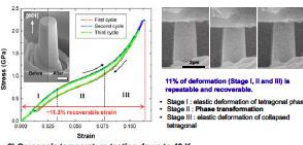
Methods

- Synthesis (Ames) = Experiment (UConn) + DFT (Colorado State)
- CaFe_2As_2 single crystals were solution-grown at Ames Laboratory.
- Microtomes with an aspect ratio of 2:1 having a diameter of 20 μm in diameter were milled out on the single crystal using a Focused Ion Beam (FIB).
- The single crystal was then imaged in an Scanning Electron Microscope. In-situ uniaxial compression testing was performed at various.
- Cryogenic testing was carried out using a custom copper rod fixture with our in-situ compression system and cryogenic temperatures were reached using liquid nitrogen and liquid helium.
- In-situ SEM Nano-indentation system w/ cryo

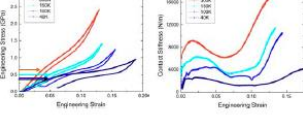


Results

1) Superelasticity of [0 0 1] CaFe_2As_2 under compression (300 K)

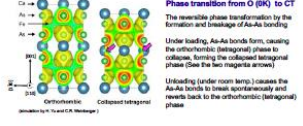


2) Cryogenic temperature testing down to 40 K

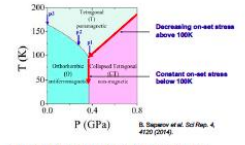


Discussion

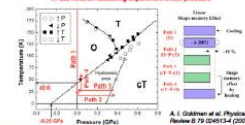
1) Superelasticity of [0 0 1] CaFe_2As_2 under compression



2) Decreasing on-set stress with decreasing temperature



3) Potential linear shape memory effect at ultra-low temperatures (T < 50 K)



Concluding Remarks

- Uniaxial compression of [0 0 1] CaFe_2As_2 microchip exhibits super-elasticity up to ~10.4 maximum recoverable strain.
- The reversible phase transition between tetragonal and collapsed tetragonal phases produces the large recoverable strain (10-20% S/E).
- The reversible phase transition even occurs under temperatures down to 39 K. However, the on-set stress of phase transformation decreases as temperature decreases down to 150 K.
- There is a promising potential for linear shape memory effect at low temperatures (T < 50K)

Acknowledgement

This work was supported by the UConn Startup funding, the UConn Research Excellence Program funding and the UConn Center for Applied Research. Research Grant Program #18 work was performed using the facilities in the UConn Research Center for Advanced Materials and Research (CAMR), Ames by the National Science Foundation. This work was supported by the U.S. Department of Energy, Office of Basic Energy Sciences, Division of Materials Sciences and Engineering. This research was performed at the Ames Laboratory, which is operated for the U.S. Department of Energy by Ames Laboratory under Contract No. DE-AC02-07OR21400. Dr. Weinberger acknowledges support from Colorado State University, S. Yipen and M. Anishchik acknowledge support from the company under an industrial partnership agreement.

<https://swlee.engr.uconn.edu/2018/07/20/john-received-the-best-poster-award-at-icmsa-18/>



Thank you

**Regional Coordination Unit
Regional Scholarship and Innovation Fund**

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Regional Coordination Unit

